



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Application of :
Akihiro IINO et al. :
Serial No. 09/369,090 : Group Art Unit - 2834
Filed: August 5, 1999 : Examiner - Mark O. Budd
For: ULTRASONIC MOTOR AND :
ELECTRONIC APPLIANCE :
WITH ULTRASONIC MOTOR : Docket No. S004-3747(RCE)
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MS PETITION
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION UNDER 37 CFR §1.181 FOR WITHDRAWAL
OF NOTICE OF ABANDONMENT

S I R:

Applicants respectfully petition pursuant to 37 CFR §1.181 for withdrawal of an erroneously issued notice of abandonment mailed on October 27, 2003 in the above-identified application.

Statement of Facts

On October 27, 2003, a Notice of Abandonment was mailed in the above-captioned application. The Notice states that the application was abandoned for failure to file a response to the Office letter dated October 21, 2002. A copy of the Notice of Abandonment is attached hereto.

MAILING CERTIFICATE ON
LAST PAGE

During a telephonic interview with Examiner Budd, the Examiner indicated that the notice of abandonment mailed on October 27, 2003 was based upon applicants' failure to file a brief on appeal. Examiner Budd indicated that applicants' notice of appeal and accompanying petition for two-month extension of time had been received and entered, but that no brief on appeal was received.

On January 6, 2003, applicants filed three (3) copies of a brief on appeal and a cover page identifying the application data and including a mailing certificate dated January 6, 2003. The mailing certificate appears on the reverse side of the cover page. Also submitted with applicants' brief and cover page was a return-receipt postcard identifying the documents.

A copy of each of these documents (including the January 6, 2003 mailing certificate) and the return-receipt postcard indicating receipt by the Patent Office on January 13, 2003 is enclosed herewith. Applicants have also enclosed two additional copies of its brief on appeal.

The Patent Office acknowledged receipt of the documents by stamping as "RECEIVED" on January 13, 2003 and returning applicants' return-receipt postcard. A copy of the postcard bearing the Patent Office date stamp of January 13, 2003 is also attached hereto.

As indicated by the enclosed documents and return-receipt postcard (indicating enclosure of the documents), it

is clear that applicants timely filed their brief on appeal and thus fully and timely responded to the October 21, 2002 Office letter.

Petition Fee

No petition fee is believed required in connection with this petition. However, should it be determined that a petition fee is due, authorization is hereby given to charge any such fee to our Deposit Account No. 01-0268.

Relief Sought

In view of the foregoing, applicants respectfully request that the October 27, 2002 Notice of Abandonment be vacated as having been erroneously issued, and that the application be restored to the pending files.

Respectfully submitted,

ADAMS & WILKS
Attorneys for Applicants

By: 

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MAILING CERTIFICATE

I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: MS PETITION, COMMISSIONER FOR PATENTS, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

Debra Buonincontri

Name

Debra Buonincontri

Signature

December 9, 2003

Date



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/369,090	08/05/1999	AKIHIRO IINO	S004-3747	6307

7590

10/27/2003

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EXAMINER

BUDD, MARK OSBORNE

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



Notice of Abandonment

Application No.

09/369,090

Examiner

Mark Budd

Applicant(s)

IINO ET AL.

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on 21 October 2002.
 - (a) ☐ A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
 - (b) ☐ A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection.
(A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
 - (c) ☐ A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
 - (d) ☒ No reply has been received.
2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
 - (a) ☐ The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
 - (b) ☐ The submitted fee of \$_____ is insufficient. A balance of \$_____ is due.
The issue fee required by 37 CFR 1.18 is \$_____. The publication fee, if required by 37 CFR 1.18(d), is \$_____.
 - (c) ☐ The issue fee and publication fee, if applicable, has not been received.
3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
 - (a) ☐ Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
 - (b) ☐ No corrected drawings have been received.
4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
6. ☐ The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.
7. ☐ The reason(s) below:

Mark Budd
Primary Examiner
Art Unit: 2834

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

**KINDLY ACKNOWLEDGE RECEIPT OF THE
BELOW-LISTED MATERIAL, AND RETURN:**

BRIEF COVER LETTER (WITH MAILING CERTIFICATE),
BRIEF ON APPEAL, IN TRIPLICATE and CHECK
IN THE AMOUNT \$320.00

IINO et al.

S.N. 09/369,090
D.N. S004-3747 (RCE)

RECEIVED
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BOARD OF PATENT APPEALS
AND INTERFERENCES



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January 6, 2003

COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

Attn: Board of Patent Appeals and Interferences

Re: Patent Application of Akihiro IINO et al.
Serial No. 09/369,090
Filed: August 5, 1999
Group Art Unit - 2834
Examiner: Mark O. Budd
Docket No. S004-3747(RCE)

S I R:

Appellants submit herewith, in triplicate, their brief on appeal in connection with the captioned application. A check in the amount \$320.00 is enclosed herewith to cover the required appeal fee. Should the check prove insufficient for any reason, authorization is hereby given to charge any deficiency to Deposit Account No. 01-0268.

Respectfully submitted,

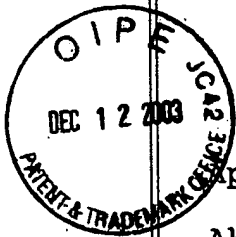
ADAMS & WILKS
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Reg. No. 25,386

BLA:db
Enclosures

MAILING CERTIFICATE ON
REVERSE SIDE OF PAGE



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Application of :
Akihiro IINO et al. :
Serial No. 09/369,090 : Group Art Unit - 2834
Filed: August 5, 1999 : Examiner - Mark O. Budd
For: ULTRASONIC MOTOR AND :
ELECTRONIC APPARATUS :
HAVING ULTRASONIC :
MOTOR : Docket No. S004-3747(RCE)

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COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, DC 20231

BRIEF ON APPEAL

S I R:

An appeal has been taken from the final rejection of claims 1, 2, 4, 6, 7 and 9, and appellants present herewith their brief in support of the appeal.

(1) Real Party of Interest:

The real party of interest in this appeal is Seiko Instruments Inc.

(2) Related Appeals and Interferences:

Appellants and appellants' counsel are aware of no other appeals or interferences which will directly affect or

be directly affected by or have a direct bearing upon the Board's decision in the present appeal.

(3) Status of Claims:

The present application was filed with claims 1-9. Claims 10-33 were added by amendment and claims 8, 20 and 21 were canceled. Claims 1, 2, 7 and 9 stand finally rejected under 35 U.S.C. §102(a) and claims 4 and 6 stand finally rejected under 35 U.S.C. 103(a). The present appeal is directed to the final rejection of claims 1, 2, 4, 6, 7 and 9. Claims 3, 5, 10-19 and 22-33 stand allowed.

(4) Status of Amendments:

In response to a final Office Action dated July 3, 2001, a first amendment after final was filed by certificate of mail dated November 5, 2001. In an Advisory Action dated January 15, 2002, the Examiner indicated that the first amendment after final would be entered but that the final rejections would be maintained. A second amendment after final was filed by certificate of mail dated December 5, 2001 and in a notice of allowance mailed on January 15, 2002, the Examiner indicated that the second amendment after final had been entered and all claims were deemed allowable.

However, for the purpose of broadening the scope of independent claim 1, applicants filed a Request for Continued

Examination (RCE) on April 15, 2002 along with an amendment under 37 CFR §1.114 amending claim 1 in a broadening respect and amending claims 24 and 26 to conform therewith. In a final Office Action mailed on June 13, 2002, claims 1, 2, 4 and 6-9 were rejected. In an amendment after final filed on September 13, 2002, claims 1, 3, 5 and 22 were amended. Although entry of the amendment after final was initially denied in an Advisory Action mailed on October 8, 2002, a telephonic interview was conducted with the Examiner on October 15, 2002, resulting in the issuance of an Advisory Action and Interview Summary on October 21, 2002, indicating that the amendment after final would be entered but the final rejections of claims 1, 2, 4, 6, 7 and 9 would be maintained, and further indicating that claims 3, 5, 10-19, 22 and 24-33 are allowed. No subsequent amendment after final was filed and no amendment stands unentered.

(5) Summary of Invention:

The present invention relates to an ultrasonic motor having improved vibration efficiency. The inventive ultrasonic motor has the components of a conventional ultrasonic motor, including an elastic member for resiliently biasing a piezoelectric element against a moving member to efficiently transmit a drive power caused by oscillation of

the piezoelectric element to the movable member (substitute specification, pages 1-2). The conventional ultrasonic motor relies upon expansion-and-contraction and flexural vibration of the piezoelectric element to drive the movable member and uses signal lines to transmit drive signals from a circuit board to the piezoelectric element.

The conventional ultrasonic motor is typically installed on a circuit board by means of a support member which holds the piezoelectric element to the circuit board. Additionally, signal transmission lines extend between the circuit board and the piezoelectric element separate from the support member for supplying a drive signal to the piezoelectric element.

As further described at pages 1-2 of the substitute specification, the use of separate components to form the support member, the signal transmission lines, and the elastic member, results in a significant loss in expansion-and-contraction and flexural vibrations of the piezoelectric element. Thus, the general construction of the conventional ultrasonic motor lends to inefficient transmission of drive force from the piezoelectric element to the moving member and impairs the electrical-to-mechanical energy conversion.

The present invention provides an improved ultrasonic motor construction which results in a reduced loss

factor (page 1, first paragraph). In accordance with the present invention, less loss in the piezoelectric drive force occurs whereby the drive force is more efficiently transmitted to a moving member id. In addition, the present invention facilitates a size reduction and increased reliability by eliminating unnecessary components from the motor (page 2, last paragraph).

More specifically, in accordance with the invention recited by independent claim 1, the ultrasonic motor comprises a movable member disposed to undergo movement in response to a drive force, a substrate having a conductor pattern for conveying a drive signal from a drive circuit, a piezoelectric vibrator provided on the substrate for undergoing oscillating movement in response to the drive signal so as to contact the movable member and thereby generate the drive force for driving the movable member, and a support member provided on the substrate for fixedly mechanically supporting the piezoelectric vibrator at a point corresponding to a node of vibration of the piezoelectric vibrator on the substrate and transmitting the drive signal from the conductor pattern to electrodes of the piezoelectric vibrator.

By the structure recited in claim 1, the support member serves the dual function of supporting the piezoelectric element and transmitting the drive signal from

the conductor pattern to the piezoelectric vibrator. As pointed out above, the use of signal transmission lines separate from the support member results in vibration loss. By combining these elements of the ultrasonic motor, vibration loss is reduced.

Furthermore, independent claim 1 requires a support member provided on a substrate for fixedly mechanically supporting the piezoelectric vibrator on the substrate at a point corresponding to a node of vibration of the piezoelectric vibrator. Accordingly, vibration loss is further reduced.

The invention recited by claim 1 overcomes the problems associated with the conventional ultrasonic motor by providing an ultrasonic motor in which a piezoelectric element directly contacts a movable member in response to oscillation thereof and drives the movable member. The device has a support member provided on a substrate for mechanically and fixedly supporting the piezoelectric vibrator at a point corresponding to a node of vibration of the piezoelectric vibrator. The support member transmits drive signals from a conductor pattern to electrodes of the piezoelectric vibrator so that no conductor wires extend from the substrate to connect the drive circuit to the piezoelectric vibrator. Thus, in addition to facilitating efficient transfer of

vibration from the piezoelectric vibrator to the movable member, the claimed invention eliminates the need for conductor wires separate from the support member by providing a support member capable of serving as a conductive path. According to the present invention, the support member not only supports the piezoelectric element on a substrate, but also transmits a drive signal to the piezoelectric element so that additional conductor wires are not needed (page 3, fourth full paragraph).

Moreover, the support member is preferably formed of a resilient material or has a flexible portion so that it resiliently urges the piezoelectric element against the movable member, thereby eliminating the need for a separate elastic member to bias the piezoelectric element and movable member (page 4, paragraphs 1-5). Accordingly, the present invention makes it possible to substantially reduce the size and part count of the ultrasonic motor and to reduce the loss associated with the use of multiple components as described above (page 4, first full paragraph). An additional reduction in loss is achieved by providing the support member for supporting the piezoelectric vibrator at a point corresponding to a node of vibration thereof so that vibration loss is further reduced (page 7, second through fourth full paragraphs).

A preferred embodiment of the invention is illustrated in Fig. 1 of the application drawings and described at pages 9-11 of the specification. The ultrasonic motor 1 includes a piezoelectric element 10 that receives a drive signal X, such as a sine wave. The piezoelectric element 10 is supported by support members 11, 11 so that the drive signal X causes the piezoelectric element 10 to undergo elliptical vibration. The support members 11, 11 hold the piezoelectric element 10 on a substrate 7 and deliver signals through signal lines 7a, 7b on the substrate 7. A member 12 maintains a moving member 12a in contact with an end face of the piezoelectric element 10. A driver IC 6 is provided on the substrate 7 to input the drive signal X to the piezoelectric element 10 through the signal lines 7a, 7b and the support members 11, 11.

The ultrasonic motor 1 causes elliptical vibration of the end face of the piezoelectric member 10 in response to the drive signal X supplied by the driver IC 6 to thereby move the moving member 12a in directions parallel to the end face.

The support members 11 are formed of a resin, for example, generally in a L-form and each having, for example, three signal lines on a surface. That is, the support members 11, 11 have 6 signal lines corresponding to 6 electrodes provided on the side faces of the piezoelectric element 10.

The support member 11 has one side 11a fixed to the signal line 7a of the substrate 7, for example, through solder. Also, the support member 11 has the other side 11b fixed on a side face of the piezoelectric element 10, for example, through conductive adhesive at a node of flexural vibration of the piezoelectric element 10 (page 10, last paragraph).

The support members 11, 11 support the piezoelectric element 10 on the substrate 7 and connect between the electrodes of the piezoelectric element 10 and the signal line 7a and signal line 7b.

In this manner, the support member 11 formed with the signal line also serves as a signal transmission means to transmit a signal to the piezoelectric element 10. Thus, the number of parts connected to the piezoelectric member 10 is reduced and the ultrasonic motor 1 is made smaller in size.

(6) Issue:

A primary issue presented by this appeal is whether U.S. Patent Nos. 4,513,219 to Katsuma et al. ("Katsuma"), 5,247,220 to Miyazawa et al. ("Miyazawa"), and 4,959,580 to Vishnevsky et al. ("Vishnevsky") identically disclose the subject matter recited by each of claims 1, 2 and 7 so as to anticipate these claims under 35 U.S.C. §102(a).

Another primary issue presented by this appeal is whether the subject matter of claims 4 and 6 is rendered obvious by each of Katsuma, Miyazawa, and Vishnevsky.

(7) Grouping of Claims:

In the final Office Action, claims 1, 2 and 7 were grouped together in one ground of rejection under 35 U.S.C. §102(a). Claims 4 and 6 were grouped together in one ground of rejection under 35 U.S.C. §103(a).

Appellants respectfully submit that the rejected claims fall in the following groups, the claims in each group being separately patentable for the reasons given below in section (8):

- (a) Independent claim 1 and dependent claim 9;
- (b) Dependent claim 2;
- (c) Dependent claim 4;
- (d) Dependent claim 6; and
- (e) Dependent claim 7.

(8) Argument:

Claims 1, 2, 7 and 9 stand finally rejected under 35 U.S.C. §102(a) as being anticipated by Katsuma, Miyazawa and Vishnevsky. Claims 4 and 6 stand finally rejected under 35 U.S.C. §103(a) as being unpatentable over Katsuma, Miyazawa, or Vishnevsky.

Appellants respectfully submit that claims 1, 2, 4, 6, 7 and 9 patentably distinguish from the prior art of record.

Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of the claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Systems, Inc., 221 USPQ 385, 388 (Fed. Cir.), cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore and Associates, Inc. v. Garlock, Inc., 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

Claims 1, 2, 7 and 9 are not anticipated or rendered obvious by Katsuma, Miyazawa or Vishnevsky.

Independent claim 1 requires a piezoelectric vibrator that undergoes oscillating in response to the drive signal so as to contact the movable member and generate the drive force to drive the movable member, and a support member for mechanically supporting the piezoelectric vibrator on a substrate at a point corresponding to a node of vibration of the piezoelectric vibrator and transmitting a drive signal to electrodes of the piezoelectric vibrator so that no conductor wires extend from the substrate to connect the piezoelectric vibrator to a drive circuit.

None of the cited references discloses an ultrasonic motor in which a piezoelectric element comes into contact with a movable member to drive the movable member as recited by independent claim 1. Nor do any of the cited references disclose or suggest a support member which fixedly supports a piezoelectric vibrator at a point corresponding to a node of vibration thereof.

In particular, Vishnevsky discloses a piezoelectric motor having a stator 1 having a stator and a rotor 3, the stator 1 having a housing 7 and a piezoelectric oscillator 6 mounted to the housing 7. The piezoelectric oscillator 6 has a piezoelectric cell 9 with electrodes 13 and pushers 10, each pusher 10 having one end secured to one flat surface of the piezoelectric cell 9 so that a gap 14 is provided between the piezoelectric cell 9 and the pusher 10. The other end of each pusher 10 rests against the rotor 3. Vishnevsky fails to disclose or suggest any supporting structure for the piezoelectric vibrating body. Although Vishnevsky discloses elastic members (or pushers 10) interposed between the piezoelectric cell 9 and the rotor to convert the vibratory movement of the piezoelectric cell 9 into rotary movement of the rotor 3, the reference does not address the manner in which the piezoelectric element is supported.

Miyazawa discloses structure similar to that of Vishnevsky. For example, in the ultrasonic motor illustrated

in Fig. 7 of Miyazawa, a piezoelectric element 3-1 is formed on a bottom surface of a stator 2-1. A rotor 1-1 has projections 1a-1 extending therefrom. The projections 1a-1 are disposed on a top surface of the stator 2-1. The piezoelectric element 3-1 is formed on the bottom surface of the stator 2-1 and never contacts the rotor 1-1. Miyazawa does not disclose or suggest the supporting structure recited by independent claim 1. Nor does the reference disclose or suggest a piezoelectric element provided on a substrate for undergoing oscillating movement in response to the drive signal so as to contact the movable member and thereby generate the drive force for driving the movable member as required by claim 1.

The ultrasonic motor of Katsuma is similar to that of Vishnevsky and Miyazawa and the reference does not disclose a piezoelectric element having the supporting structure required by amended independent claim 1.

Nor do the references disclose or suggest a substrate having a conductor pattern for conveying a drive signal from a drive circuit, a piezoelectric vibrator provided on the substrate, and a support member for supporting the piezoelectric vibrator and transmitting the drive signal to the piezoelectric vibrator as required by claim 1. Nothing in the cited references would have suggested the novel combination of elements set forth by independent claim 1.

Since Vishnevsky, Miyazawa and Katsuma fail to disclose or suggest the subject matter recited by independent claim 1, none of claims 1, 2, 7 and 9 are anticipated by the prior art of record.

A finding of anticipation requires the disclosure, by a single reference, of all claimed subject matter. In the absence of any disclosure of (1) a piezoelectric element that comes into contact with a movable member to drive the movable member, (2) a support member which fixedly supports a piezoelectric vibrator at a point corresponding to a node of vibration thereof, (3) a substrate having a conductor pattern for conveying a drive signal from a drive circuit, (4) a piezoelectric vibrator provided on the substrate, and (5) a support member for supporting the piezoelectric vibrator and transmitting the drive signal to the piezoelectric vibrator as required by claim 1, See, e.g., W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) ("Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration"); Continental Can Co. USA v. Monsanto Co., 20 USPQ2d 1746, 1748 (Fed. Cir. 1991) ("When more than one reference is required to establish unpatentability of the claimed invention anticipation under § 102 can not be found"); Lindemann Maschinenfabrik GmbH v.

American Hoist & Derrick Co., 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added) ("Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim").

Furthermore, dependent claims 2 and 7 contain subject matter that is separately patentable. Dependent claim 2 recites that the support member has sufficient elasticity to elastically urge the piezoelectric vibrator against a moving member to drive the moving member in response to oscillating movement of the piezoelectric vibrator. As described above, the use of an elastic support member eliminates the need for the conventional use of an elastic member for urging the moving member in contact with the piezoelectric vibrator. There is no such disclosure or suggestion of this subject matter in the cited references or in claim 1.

Dependent claim 7 recites that the support member is provided with at least a part of a drive circuit for producing the drive signal. There is no disclosure or suggestion of this subject matter in the cited references or in claim 1.

Accordingly, appellants respectfully submits that the anticipatory rejection of claims 1, 2 and 7 is in error and should not be sustained.

Appellants further submit that the cited references, either taken alone or in combination, do not render obvious either of dependent claims 4 or 6.

In support of the obviousness rejection of claims 4 and 6, the Examiner stated that each of the cited references discloses the claimed structure except for the support member comprising a separate element, which is not a patentable distinction.

The Examiner's reliance upon a per se rule of unpatentability in making things separate or integral is not only incorrect, but is entirely inapplicable in this instance. First, there is no such per se rule. Second, even such a rule were in effect, claims 4 and 6 do not purport to recite making things separate or integral.

Neither of dependent claims 4 or 6 pertains to the support member being formed of a separate element. Dependent claim 4 recites that the support member comprises part of the substrate and dependent claim 6 recites that the piezoelectric vibrator is mounted on the support member.

Accordingly, appellants respectfully submit that the obviousness rejections of claims 4 and 6 are in error and should not be sustained.

Furthermore, each of dependent claims 4 and 6 is separately patentable. Nothing in the cited references or in claim 1 suggests the subject matter of claim 4 and nothing in the cited references or claims 1 and 4 suggests the subject matter of claim 6.

Accordingly, appellants respectfully submit that the anticipatory rejection of claims 1, 2 and 7 and the obviousness rejection of claims 4 and 6 are in error and should be withdrawn.

In view of the foregoing, appellant respectfully submits that claims 1, 2, 4, 6, 7 and 9 patentably distinguish over the prior art record and, therefore, the rejection of these claims should not be sustained.

Respectfully submitted,

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(9) Appendix

Appealed claims 1, 2, 4, 6, 7 and 9 are reproduced below in smooth form:

1. An ultrasonic motor, comprising: a movable member disposed to undergo movement in response to a drive force; a substrate having a conductor pattern for conveying a drive signal from a drive circuit; a piezoelectric vibrator provided on the substrate for undergoing oscillating movement in response to the drive signal so as to contact the movable member and generate the drive force to drive the movable member; and a support member provided on the substrate for mechanically fixedly supporting the piezoelectric vibrator at a point corresponding to a node of vibration of the piezoelectric vibrator on the substrate and transmitting the drive signal from the conductor pattern to electrodes of the piezoelectric vibrator so that no conductor wires extend from the substrate to connect the drive circuit and the piezoelectric vibrator.

2. An ultrasonic motor according to claim 1; wherein the support member has sufficient elasticity to elastically urge the piezoelectric vibrator against a moving member to drive the moving member in response to oscillating movement of the piezoelectric vibrator.

4. An ultrasonic motor according to claim 1;
wherein the support member comprises part of the substrate.

6. An ultrasonic motor according to claim 4;
wherein the piezoelectric vibrator is mounted on the support
member.

7. An ultrasonic motor according to claim 1;
wherein the support member is provided with at least a part of
a drive circuit for producing the drive signal.

9. An electronic appliance having an ultrasonic
motor according to claim 1.